Space Weather Forecast

Issued on Friday, 22 October 2021 at 13:05 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: No significant activity expected.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity was Very Low, There is currently one numbered sunspot region on the visible disc, in the southeast quadrant. A returning sunspot region has emerged onto the bottom left quadrant of the solar disc, likely with greater magnetic complexity to the other one, but is currently rather quiet in terms of flaring. No Earth-directed CMEs (Coronal Mass Ejections) were observed in the last 24 hours.

Solar Wind / Geomagnetic Activity: The solar wind has been at predominantly elevated levels, with current solar winds around 450 km/s, peaking at 526 km/s at 21/1638 UTC. The magnetic properties of the solar wind at Earth have been weak and unfavourable for geomagnetic storming, with the resultant geomagnetic activity remaining Quiet (Kp 0-2) through the last 24 hours.

Energetic Particles / Solar Radiation: No solar radiation storms were observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is expected to be at low or very low levels through the next few days, but with perhaps a slight increase in flare probabilities as the returning active region rotates further into view (increasing from 1% to 5% risk of a moderate flare Saturday onwards).

Solar Wind / Geomagnetic Activity: Solar winds are currently slightly elevated, but waning back to quiet and ambient levels. Geomagnetic activity is expected to be mainly Quiet (Kp0-2) through the next 4 days, but with isolated Unsettled (Kp3) intervals possible during the rest of today (22nd Oct).

Energetic Particles / Solar Radiation: No solar radiation storms are expected.

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	1	1	1	1
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	1	5	5	5
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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